Summary of Cancer Incidence and Mortality for Zip Codes 29334 (Duncan, SC), 29365 (Lyman, SC), 29369 (Moore, SC), and 29385 (Wellford, SC)

Cancer Incidence in Zip Codes 29334, 29365, 29369 and 29385

The first step in the analysis of cancer data for these zip codes was to look at the number of new cancer cases diagnosed in each zip code and compare this to the number of cancer cases expected in each zip code (see Tables 1-4). This first step determines if there is anything unusual with cancer patterns in the area. The number of "expected" cancer cases is calculated by using South Carolina cancer rates and applying them to the population of each zip code.

Tables 1-4 show what types of cancer were diagnosed in each zip code from 1996-2000, and how many cancer cases were expected. Overall, there were fewer cases of cancer than expected in zip codes 29334, 29365 and 29385. There was one more cancer case than expected in zip code 29369; however, this excess was not statistically significant. The most common types of cancer were prostate, lung, female breast, and colon/rectum cancers. These types of cancer are also the most common cancers occurring across all of South Carolina.

The analysis revealed two specific types of cancer **(melanoma and prostate)** where the number of cases was significantly higher than expected. Melanoma was significantly higher in zip code 29365. The main risk factor for melanoma is excessive exposure to ultraviolet radiation from sunlight or tanning booths. Also, having certain types of moles makes a person more likely to develop melanoma. Finally, the risk of melanoma is greater if one or more of a person's first-degree relatives have been diagnosed with melanoma.

Prostate cancer was significantly higher in zip code 29369. The causes of prostate cancer are not well known, however, researchers have determined a few risk factors that increase a man's chance of developing this disease. These risk factors include increasing age, a diet high in fat, a lack of physical activity, and family history of the disease. Also, prostate cancer occurs almost 70% more often in African-Americans as it does in white American men.

Cancer Deaths in Zip Codes 29334, 29365, 29369 and 29385

To assess cancer deaths in these zip codes, cancer mortality data from 1997-2001 were used. The same process used to analyze new cancer cases was also used to analyze cancer deaths. Tables 5-8 show the number of cancer deaths that occurred in each zip code and the number expected in each zip code. Overall, there were fewer cancer deaths than expected in zip codes 29334, 29365 and 29369. There were four more cancer deaths than expected in zip code 29385; however, this excess was not statistically significant.

The analysis did not reveal any specific types of cancer where the number of cancer deaths was significantly higher than expected.

Conclusions

To summarize, more cancer cases occurred in zip code 29369 than expected, and more cancer deaths occurred in zip code 29385 than expected. However, these excesses were not statistically significant. Melanoma and prostate cancer incidence were significantly elevated in zip codes 29365 and 29369, respectively. These two types of cancer are more common types of cancer, and the risk factors associated with these cancers are primarily lifestyle relates (i.e. sun exposure, high fat diet, lack of physical activity).

In order for a true cancer cluster to exist, the number of cancers occurring must be more than would be expected by chance. Along with statistical testing, there are several other criteria that determine whether a true cancer cluster exists. First, a cancer cluster would more likely involve rarer types of cancer rather than more common cancers like lung or prostate cancers. Also, a cancer cluster would occur with one specific type of cancer rather than having excesses in several different types of cancer.

Taking all these criteria into consideration, there is no evidence of cancer clustering or of an excess of cancers resulting from environmental exposures in zip codes 29334, 29365, 29369 or 29385.

For questions about this report, please contact Laura Sanders at the SC Central Cancer Registry.

Report provided by:
SC Central Cancer Registry
Department of Health and Environmental Control
2600 Bull St.
Columbia, SC 29201
Phone: (800) 817-4774 or (803) 898-3696

Information on cancer incidence provided by the SC Central Cancer Registry, Office of Public Health Statistics and Information Services, SC Dept. of Health and Environmental Control.

Information on cancer mortality provided by the Division of Vital Records and the Division of Biostatistics, SC Dept. of Health and Environmental Control. *1/15/04*

Table 1. Analysis of New Cancer Cases in Zip Code 29334 (Duncan, SC), 1996-2000

Site	Observed No. of Cases	Expected No. of Cases	Observed/Expected	Chi-SquareTest*
Lung/Bronchus	35	25.6	1.37	3.47
Breast (Female)	29	24.3	1.19	0.92
Prostate	23	26.5	0.87	0.45
Colon/Rectum	18	18.2	0.99	0.00
Bladder	7	6.2	1.13	0.10
Melanoma	3	5.8	0.52	1.32
Non-Hodgkins Lymphoma	3	5.3	0.57	1.00
Oral/Pharynx	1	4.7	0.21	2.94
All Sites	156	162.1	0.96	0.23

Table 2. Analysis of New Cancer Cases in Zip Code 29365 (Lyman, SC), 1996-2000

Site	Observed No. of Cases	Expected No. of Cases	Observed/Expected	Chi-Square Test*
Breast (Female)	30	27.5	1.09	0.22
Colon/Rectum	26	21.6	1.20	0.88
Prostate	22	30.5	0.72	2.37
Lung/Bronchus	21	29.2	0.72	2.29
Melanoma	**13**	**6.3**	**2.06**	**7.12**
Non-Hodgkin Lymphoma	8	6.1	1.32	0.62
Bladder	5	7.3	0.68	0.74
Uterus	5	4.5	1.11	0.05
Oral/Pharynx	3	5.3	0.56	1.03
Kidney/Renal Pelvis	2	4.7	0.43	1.52
All Sites	178	185.5	0.96	0.30

Excludes in situ cases of cancer to allow for comparison.

Cancer sites with less than 5 cases of cancer expected are not analyzed due to the unreliability of statistical tests based on small numbers.

*The Chi-square statistical test allows us to determine if the difference between what is observed and what is expected is significant. If the value is greater than 3.84, then we are 95% confident that the observed number of cases is significantly different from the expected number of cases.

Prepared by: SC Central Cancer Registry, Office of Public Health Statistics and Information Services, Department of Health and Environmental Control, 2600 Bull St., Columbia, SC 29201

December 19, 2003 lcs

Table 3. Analysis of New Cancer Cases in Zip Code 29369 (Moore, SC), 1996-2000

Site	Observed No. of Cases	Expected No. of Cases	Observed/Expected	Chi-SquareTest*
Prostate	**42**	**29.2**	**1.44**	**5.65**
Breast (Female)	27	28.3	0.95	0.06
Lung/Bronchus	25	28.3	0.88	0.39
Colon/Rectum	21	19.9	1.06	0.07
Kidney/Renal Pelvis	9	4.8	1.89	3.80
Melanoma	9	6.8	1.32	0.72
Bladder	6	6.7	0.90	0.06
Non-Hodgkin Lymphoma	6	5.9	1.01	0.00
Uterus	6	4.5	1.34	0.53
Oral/Pharynx	3	5.5	0.54	1.16
All Sites	183	181.5	1.01	0.01

Table 4. Analysis of New Cancer Cases in Zip Code 29385 (Wellford, SC), 1996-2000

Site	Observed No. of Cases	Expected No. of Cases	Observed/Expected	Chi-Square Test*
Prostate	24	22.4	1.07	0.11
Breast (Female)	22	20.8	1.06	0.07
Lung/Bronchus	20	21.5	0.93	0.10
Colon/Rectum	13	15.5	0.84	0.41
Bladder	4	5.2	0.76	0.30
Non-Hodgkin Lymphoma	3	4.5	0.67	0.49
Melanoma	2	4.9	0.41	1.73
All Sites	125	137.3	0.91	1.10

Excludes in situ cases of cancer to allow for comparison.
Cancer sites with less than 5 cases of cancer expected are not analyzed due to the unreliability of statistical tests based on small numbers.
*The Chi-square statistical test allows us to determine if the difference between what is observed and what is expected is significant. If the value is greater than 3.84, then we are 95% confident that the observed number of cases is significantly different from the expected number of cases.
Prepared by: SC Central Cancer Registry, Office of Public Health Statistics and Information Services, Department of Health and Environmental Control, 2600 Bull St., Columbia, SC 29201
December 19, 2003 lcs

Table 5. Analysis of Cancer Deaths in Zip Code 29334 (Duncan, SC), 1997-2001

Site	Observed No. of Deaths	Expected No. of Deaths	Observed/Expected	Chi-SquareTest*
Lung/Bronchus	26	22.0	1.18	0.74
Breast (Female)	5	5.5	0.92	0.04
Prostate	5	4.5	1.12	0.06
Colon/Rectum	3	7.1	0.42	2.35
All Sites	71	73.4	0.97	0.08

Table 6. Analysis of Cancer Deaths in Zip Code 29365 (Lyman, SC), 1997-2001

Site	Observed No. of Deaths	Expected No. of Deaths	Observed/Expected	Chi-SquareTest*
Lung/Bronchus	19	25.5	0.75	1.64
Colon/Rectum	8	8.8	0.91	0.08
Breast (Female)	6	6.5	0.93	0.03
Prostate	4	6.4	0.62	0.93
Pancreas	7	4.9	1.43	0.91
Unknown/Ill-Defined	8	NA	NA	NA
All Sites	74	88.1	0.84	2.26

Table 7. Analysis of Cancer Deaths in Zip Code 29369 (Moore, SC), 1997-2001

Site	Observed No. of Deaths	Expected No. of Deaths	Observed/Expected	Chi-SquareTest*
Lung/Bronchus	18	23.9	0.75	1.48
Colon/Rectum	5	7.5	0.67	0.83
Breast (Female)	7	6.2	1.13	0.11
Unknown/Ill-Defined	9	NA	NA	NA
All Sites	73	78.9	0.92	0.44

Table 8. Analysis of Cancer Deaths in Zip Code 29385 (Wellford, SC), 1997-2001

Site	Observed No. of Deaths	Expected No. of Deaths	Observed/Expected	Chi-Square Test*
Lung/Bronchus	20	18.5	1.08	0.12
Colon/Rectum	7	6.1	1.14	0.13
Breast (Female)	7	4.7	1.48	1.07
Unknown/Ill-Defined	2	NA	NA	NA
All Sites	67	62.6	1.07	0.30

Cancer sites with less than 5 cancer deaths expected are not analyzed due to the unreliability of statistical tests based on small numbers.
*The Chi-square statistical test allows us to determine if the difference between what is observed and what is expected is significant. If the value is greater than 3.84, then we are 95% confident that the observed number of deaths is significantly different from the expected number of deaths.
Prepared by: SC Central Cancer Registry, Office of Public Health Statistics and Information Services, Department of Health and Environmental Control, 2600 Bull St., Columbia, SC 29201 December 19, 2003 lcs